DECISION OF THE GENETICS AND INSURANCE COMMITTEE (GAIC) CONCERNING THE APPLICATION FOR APPROVAL TO USE GENETIC TEST RESULTS FOR LIFE INSURANCE RISK ASSESSMENT IN HUNTINGTON'S DISEASE (GAIC/01.1)

Decision of GAIC

The Genetics and Insurance Committee (GAIC), at their meeting on 28 September 2000, considered the application from the Association of British Insurers (ABI) dated 5 July 2000, as amended by their letter of 27 September.

The Committee approved the use of normal/abnormal genetic test results (as defined below) for Huntington's Disease in the underwriting of applications for life insurance. However, the Committee did not consider that there was sufficient data on the correlation between number of repeats in the Huntington's Disease gene and age of death for this additional information to be used in further refining the rating basis to be used in life insurance underwriting.

Definition of normal/abnormal test result for direct gene test: A result which is advised to the insurer by the individual's doctor to be normal or abnormal or, in the case where the insurer has been informed of the CAG repeat size, a test result where the CAG repeat size is 39 or greater is considered to be abnormal and a test with a lower number of repeats is considered to be a normal result.

Basis for the decision

Test accuracy

GAIC reviewed the evidence presented in the application concerning the accuracy of the two genetic tests proposed and additional advice provided by Professor Harper, based on experience from the UK Consortium. The Committee concluded that the accuracy of the direct genetic test had been adequately demonstrated and that the accuracy of the linkage analysis was also acceptable.

Clinical relevance

GAIC concluded that the application had demonstrated that the possession of an abnormal Huntington's Disease gene is associated with significant effects on mortality.

The Committee was concerned that in accessing information on the results of a genetic test that the insurance company should not receive more information than had been disclosed to the individual concerned. The ABI were in agreement with this. Consideration will be given by the Department of Health to the need to issue guidelines to the medical profession concerning the provision of patient information on Huntington's Disease to insurance companies.

Actuarial relevance

GAIC concluded that the actuarial evidence presented in the application met the criterion for approval, namely an additional mortality risk of at least 50% in at least some groups of applicants. However, although the Committee was persuaded that its threshold for actuarial relevance was undoubtedly met, it also found that there were imperfections in the methodology used within the application and the precise results obtained.

Conditions of approval

1. Insurers who wish to use the results of genetic tests for Huntington's Disease in underwriting life insurance must first notify the GAIC Secretariat giving details the name of their nominated genetics underwriter and their Chief Medical Officer. Insurers will also be expected to confirm that they agree to abide by the conditions of this approval.
2. Insurers must comply with legal requirements for obtaining consent to access medical records, keep all medical information confidential, destroy such information when it is no longer needed and comply with the requirements of the Data Protection Act 1998.
3. GAIC anticipates that the material in the application, together with the reviewers' comments, may form the basis for a reference document for underwriters and other insurance practitioners.
4. The ABI (or individual insurer) must undertake to keep GAIC informed of new scientific or actuarial information that may become available which is relevant to the use of test results for Huntington's Disease in life insurance. Stakeholders (particularly clinicians and patient support groups) are also invited to provide any further information. GAIC will review the scientific, clinical and actuarial data relating to Huntington's Disease and its clinical management to ensure that GAIC's decision remains valid, no later than five years after the date of first approval.
5. Insurers are required to provide an annual return to GAIC giving details of the number and outcomes of applications for life insurance where the results of genetic tests for Huntington's Disease are disclosed.

GAIC would also commend to insurers the document '*Genetic Testing - ABI Code of Practice*' which identifies a standard of good practice and particularly states:

1. Applicants must not be asked to undergo a Genetic Test in order to obtain insurance.
2. Existing Genetic Test results need not be disclosed in applications for life assurance up to a total of £100,000 which are directly linked to a new mortgage for the purchase of a house to be occupied by the applicant. If an applicant chooses to disclose the result, it must be ignored unless it is in the applicant's favour.
3. The Nominated Genetics Underwriter's decision will be based on fact, expert medical and genetic opinion and on his/her own judgement based on experience. The decision making process and its underlying rationale must be clearly recorded

so that a full explanation can be given to the applicant's medical attendant on request.

4. If after such consideration the risk is deemed to be too great to insure, insurers may consider offering alternative terms, where practicable, such as by excluding the known risk while providing cover for other risks.

Process of GAIC review

The application was reviewed in the following manner:

- The application was initially reviewed for completeness by GAIC at their meeting on 27 July 2000.

- The application was sent for review to the following:

  Independent geneticist
  Independent actuary
  Huntington's Disease Association (HDA)
  Huntington's Chorea Association
  Scottish Huntington's Association
  Genetic Interest Group (GIG)

- The application, together with the reports of the two expert reviewers and all the other comments received, was considered at GAIC's meeting on 28 September.

- Observers from the ABI, GIG, HDA and Alzheimer's Society received copies of all the papers for discussion in advance of the meeting and were present for the whole discussion and had an opportunity to comment further before a decision was taken.

Note: Specific underwriting practice is a matter for individual insurance companies and GAIC does not endorse any particular underwriting guidelines.

Explanatory note on GAIC review

GAIC was established by the UK government to develop criteria for the evaluation of specific genetic tests proposed for use in insurance underwriting and to evaluate such tests against those criteria. GAIC is a multidisciplinary committee including actuarial and genetic expertise and representatives of relevant patient groups.

GAIC published its criteria for evaluation of tests in June 2000 in the form of an application form and accompanying notes for guidance. To obtain approval for a specific test the applicant must demonstrate that

The test accurately measures the genetic information.

An abnormal result in the test has significant implications for the health of the individual. This is the clinical relevance of the test.

The health implications make a significant difference to the likelihood of a claim under the proposed insurance product (a minimum 50% increase in mortality risk for life assurance and a minimum 25% increase in morbidity risk for other forms of insurance). This is the actuarial relevance of the test.

The Application

Huntington's Disease (HD) is a neuropsychiatric disorder that usually presents in adult life. Early symptoms include mood and personality changes, clumsiness and involuntary muscle movements although there is considerable variation in this. The disease is progressive with decline in cognitive function and worsening of the movement disorder, which usually results in death about 15-20 years after first onset of symptoms. No treatments are currently available.

Huntington's Disease is caused by an increased number of repeats of a particular sequence (CAG) on the HD gene. Because only one copy of the affected gene is required to cause disease, offspring of an affected parent have a 50% chance of inheriting the gene.

The decision to have a predictive genetic test for HD before the onset of symptoms is an individual one for the person at risk and is always accompanied by counselling from the genetic centre. The application stated that individuals will not be required to take genetic tests in order to obtain insurance but where such a test has been undertaken, insurers wish to be able to use the results in underwriting life insurance.

The ABI sought approval for two tests, the direct analysis of CAG repeat length and an older, less accurate procedure of linkage analysis. This is to be used only for those individuals who had this test performed and did not have a further test when the direct test became available. Prior to the availability of tests for HD, the application states that insurers often declined requests for life insurance or were only able to grant insurance at higher premiums based on family history and age of onset details.

Evidence is presented of the prevalence of HD in the UK population from two studies which showed a HD incidence of around 6.4 to 8.5 per 100,000 people. The age of onset can vary from childhood (this is rare) to old age but is most usually in the 35-55 years age range. Evidence is presented that the age of onset decreases with increase in the number of CAG repeats.

Evidence on the course of the disease showed that this can vary but that overall life expectancy from onset of symptoms was about 15 to 20 years. In one report summarising 12 other studies, the mean age of death was fairly consistent at age 51 to 57 but the range was much greater. The number of CAG repeats was less strongly correlated with age of death than to age of symptom onset.

Data are presented on the additional mortality risk at a range of ages for males and females over the probable term of an insurance product. The data are based on Dutch data on 1106 patient histories of affected individuals, 800 of whom had died at the time of the report. Assuming normal distributions for age of onset and for post-onset

mortality, mean duration of illness and survival periods were calculated. These were then used to model the additional mortality risk. This model was used for males and females aged from 20 to 50 and looking at life assurance terms of 10, 20 and 30 years. In all categories, with the possible exception of males aged 50 requesting insurance for 10 years, the figures indicate that the additional mortality risk for individuals with the HD gene was significantly above the threshold of 50% set by GAIC for approval of a genetic test.

The limitations of the data and calculations and assumptions made are discussed in the application. The application also indicates that, if further clinical and actuarial data become available, then it may be possible to offer life insurance on acceptable terms to individuals carrying an abnormal gene, based on the likely disease free interval plus the clinical course after the onset of symptoms. GAIC invites the insurance industry and geneticists to collaborate in collecting this additional data.

Further information

Further information about GAIC is available on the Department of Health webpages at www.doh.gov.uk/genetics/gaic.htm. A copy of the application and expert reviews are available from the GAIC Secretariat at mb-gaic@doh.gsi.gov.uk.

GAIC
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